REMARKS

Favorable reconsideration and allowance of the present patent application are respectfully requested in view of the foregoing amendments and the following remarks. Claims 1-3 and 5-7 are pending in the application. Claim 8 is newly added and is a method claim corresponding to apparatus Claim 1.

Rejections under 35 U.S.C. § 102 and 103

Since the Examiner has maintained his rejection of claims 1, 2 and 6 under 35 U.S.C. § 102(e) and claims 3, 5, and 7 under 35 U.S.C. § 103(a), the Applicant **once again traverses** these rejections. Applicant expressly maintains the reasons from the prior responses to clearly indicate on the record that Applicant has not conceded any of the previous positions relative <u>to</u> the maintained rejections. For brevity, Applicant expressly incorporates the prior arguments presented in the June 7, 2002 response and the Preliminary Amendment filed with the August 7, 2002 Continued Prosecution Application (CPA) without a literal rendition of those arguments in this response.

Claims 1, 2 and 6 are rejected under 35 U.S.C. § 102(e) as being allegedly anticipated by Paik et al. (U.S. Patent No. 6,076,088). Applicant respectfully traverses the rejection.

Claim 1 is directed to an object data search apparatus comprising a database for storing object data in association with a plurality of attribute words categorized according to sentence elements of a natural language. An input unit receives an input

of a search criterion in the form of a natural language. A criterion retrieval unit analyzes the search criterion in the form of the sentence and retrieves one of a plurality of search words respectively corresponding to sentence element categories of the natural language. An object retrieval unit searches the database using each of the search words respectively associated with the sentence element categories, and retrieving the object data associated with the attribute words that match a single search word or a plurality of search words. Relationships existing between at least one of the plurality of search words corresponding to the sentence element categories of the natural language are used with information features associated with the attribute words to further refine searching. An output apparatus outputs the object data that is retrieved in this manner.

The Applicant respectfully submits that the present amendment has rendered the Examiner's rejection moot. In the present invention, "the search words respectively associated with the sentence element categories," discloses an example of intelligent decision-making that uses relationships between words to assist in the data searching process. For purposes of illustration, **let us examine** the situation where a sentence contains positional information such as destination-of-travel data. Since the target of search is destination-of-travel information, the present invention can use a word [such as an agent of action (verb)] to assist in the decision making process. The verb can be used to discern what can be done at a particular destination-of-travel.

Paik et al. fails to disclose the usage of agents of action in conjunction with destination-of-travel data as claimed in the Applicant's claimed invention. A very detailed example further showing how the present invention works versus the Paik et al.

reference was submitted in the June 7, 2002 response on pages 2 through 5. For purposes of brevity and avoiding duplication, this information will not be included in this response. Rather, the Examiner is respectfully asked to revisit the example in light of the present amendment.

To aid the Examiner in appreciating the distinction between the present invention and the applied references, another example will be given. In accordance with the present invention, when a search word "family" of the S attribute and a search word "swimming pool" of the O attribute are retrieved from an initial user input, those tuples which remain (e.g., after step ST15) and which do not include the attribute word "family" of the S attribute and the attribute word "swimming pool" of the O attribute are prevented from being output, <u>even if</u> they include "family" or "swimming pool" as attribute words of the <u>keyword attribute</u>, for example, because the user didn't intend these words as "keywords". This is the operation of the filtering in step ST16, the description of which is now incorporated in claim 1.

In contrast, the Paik et al. reference only refers to filtering according to additional user input (claim 24) and filtering using "frequency and/or recency" of a CRC (claim 25). The Paik et al. reference does not teach or suggest performing filtering for attribute relation based on the grammatical structure of the natural language. Further, Applicant respectfully submits that the DeLorme reference does not make up for this deficiency.

A more specific example is provided below to further aid the Examiner. It is assumed that the database contains data (tuples) for:

- a swimming pool facility **A** associated with an attribute word "family" of the S attribute, an attribute word "swimming pool" of the O attribute and an attribute word "play" of the V attribute;

- a bathing beach **B** associated with an attribute word "family" of the S attribute, an attribute word "bathing beach" of the O attribute and an attribute word "play" of the V attribute; and

- an amusement park **C** associated with an attribute word "family" of the S attribute, an attribute word "amusement park" of the O attribute, an attribute word "play" of the V attribute and an attribute word "having a swimming pool as annex" of the keyword attribute.

Assuming that a sentence "Our family would like to play in the swimming pool" is provided as an input, a search word "family" of the S attribute, a search word "swimming pool" of the O attribute and a search word "play" of the V attribute are retrieved. As a result of searching the database using these search words, only the swimming pool **A** is retrieved according to Applicant's present invention. Without the present invention, the amusement park **C** is also retrieved as a result of the search. According to Applicant's invention, the amusement part **C** does not survive (e.g., the filtering in step ST16) because it has the "having swimming pool as annex" as the attribute word of the keyword V attribute.

For at least these reasons, it is respectfully requested that the rejection be withdrawn and that independent claim 1 be allowed. Claims 2 and 6 are dependent

claims that depend upon claim 1 and should be allowable for at least the same reasons as those provided for claim 1.

Claims 3, 5 and 7 are rejected under 35 U.S.C. §103(a) as being allegedly unpatentable over Paik et al. in view of DeLorme et al. (U.S. Patent No. 5,948,040). Applicant respectfully traverses the rejection.

Claim 3 is directed to an object data search method comprising the steps of retrieving one or a plurality of search words from a search criterion input in the form of a sentence of a natural language by analyzing the search criterion in accordance with a grammar of the natural language. A search is conducted relative to a plurality of sentence element categories associated with a plurality of object data items, based on a single search word or a plurality of search words. Object data is retrieved associated with the attribute word that matches a single search word or a plurality of search words and outputting the object data thus retrieved; and using at least a search word having an agent of action category, a search word having an action category and a search word having an object of action category.

The Examiner acknowledges that Paik et al. does not teach the destination of object travel data. The Examiner then provides DeLorme et al. in an attempt to make up for the deficiencies of the disclosure of the primary reference.

DeLorme et al. discloses a travel reservation information system. Computerized travel reservation information and planning system that generates map tickets in various media for guidance and transactions in route. These print or electronic documents can include bar or alphanumeric codes for automated recognition and/or access. WHERE?,

WHO/WHAT?, WHEN? and HOW? menus enable user inquiries into portions of recorded data.

The portion of DeLorme et al. specifically referred to by the Examiner (col. 17, lines 14-43) states that "TRIPS embodiments, for example, typically include optional capabilities such as: input and processing of transportation mode preferences, travel time/date frames, starting point, final destination and optional intermediate waypoints; digital map information ..."

This is very different from the operation of the present invention as claimed. Claim 1 of DeLorme et al. recites that the system includes a "means for a TRIPS user to relay via said computer one or more inputs related to travel, travel planning, activities associated with travel, or any combination thereof." Furthermore, when this information is taken in view of Figure 1A of DeLorme et al., it becomes apparent that the input is via a computer keyboard. As stated in column 14, lines 53-55, "The consumer or user 100 in FIG. 1A is typically accessing TRIPS at home or work using a state-of-the-art desktop PC computer 105, ...". There is no teaching or suggestion in DeLorme et al. of inputting data in a natural language format as recited in claim 1 where an input unit receives an input of "search criterion in the form of a sentence of the natural language." In column 16, lines 60-65, outputs are generated in response to "user input inquiries configured around the common-sense travel issues of (1) WHERE? (Places), (2) WHAT?/WHO? (Topics), (3) WHEN? (Times), and/or HOW TO GO & HOW MUCH COST? (Accounts)."

Accordingly, in view of the foregoing information, Applicant fails to understand how the combinations of these references can teach or suggest Applicant's claimed combinations as alleged by the Examiner.

The Examiner is reminded that as stated in MPEP § 2143.01, to establish *prima facie* obviousness of a claimed invention, **all the claim limitations** must be taught or suggested by the prior art. *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974). "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 165 USPQ 494, 496 (CCPA 1970).

Neither the primary reference nor the combination of any of the references discloses the features of Applicant's claimed combinations as noted above. Therefore, these references do not render Applicant's claimed combinations obvious as alleged by the Examiner. Accordingly, Applicant respectfully requests reconsideration and withdrawal of this rejection, and allowance of claims 1-3 and 5-7. Applicant respectfully submits that claim 8 is allowable for at least the same reasons proffered above regarding claim 1.

CONCLUSION

All objections raised in the Office Action having been addressed, it is respectfully submitted that the present application is in condition for allowance and such allowance is respectfully solicited. Should there be any outstanding matters that need to be resolved in the present application, the Examiner is respectfully requested to contact John L. Ciccozzi, Reg. No. 48,984, at the telephone number of the undersigned below, to conduct an interview in an effort to expedite prosecution in connection with the present application.
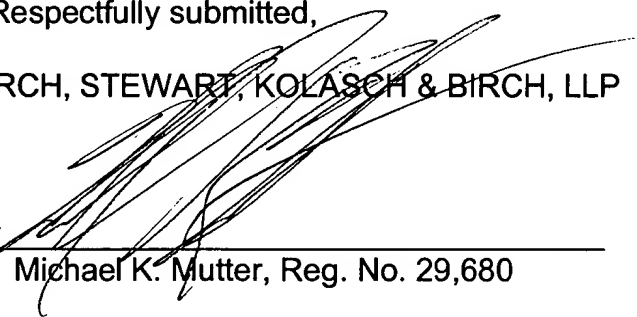
Attached hereto is a marked-up version of the changes made to the application by this Response.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1. 17; particularly, extension of time fees.

Respectfully submitted,

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Attachment: Version with Markings to Show Changes Made

(Rev. 11/28/01)

VERSION WITH MARKINGS TO SHOW CHANGES MADE

In the Abstract of the Disclosure:

A new Abstract of the Disclosure is set out on a separate page attached hereto and incorporated in this Amendment.

In the Claims:

The claims have been amended as follows:

1. (Amended) An object data search apparatus comprising:

a database for storing object data in association with a plurality of attribute words categorized according to sentence elements of a natural language;

an input unit for receiving an input of a search criterion in the form of a sentence of the natural language;

a criterion retrieval unit for analyzing the search criterion in the form of the sentence and retrieving one or [of] a plurality of search words respectively corresponding to sentence element categories of the natural language;

an object retrieval unit for searching the database using each of the search words respectively associated with the sentence element categories, and retrieving the object data associated with the attribute words that match a single search word or a plurality of search words wherein filtering for attribute relation based on the grammatical structure of the natural language is performed; and

an output apparatus for outputting the object data thus retrieved.

Claim 8 has been added as follows:

--8. (New) A method of searching object data comprising:

storing object data in association with a plurality of attribute words categorized according to sentence elements of a natural language;

inputting a search criterion in the form of a sentence of the natural language;

analyzing the search criterion in the form of the sentence and retrieving one of a plurality of search words respectively corresponding to sentence element categories of the natural language;

searching the database using each of the search words respectively associated with the sentence element categories, and retrieving the object data associated with the attribute words that match a single search word or a plurality of search words wherein filtering for attribute relation based on the grammatical structure of the natural language is performed; and

outputting the object data thus retrieved.--